

CLAIMS

1. An instrument for engaging an implant, comprising:
an engagement mechanism for selectively engaging a first portion of the implant, and
a shaft movable relative to the engagement mechanism for selectively engaging a

5 second portion of the implant to rigidify the implant and for actuating the engagement mechanism to engage with the first portion.

2. The instrument of claim 1, further comprising a body assembly defining an axially extending passageway for receiving the shaft.

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3. The instrument of claim 2, further comprising a rotatable collar surrounding the body assembly and coupled to the shaft, such that rotation of the collar in a first direction extends the shaft relative to the body assembly and movement of the rotatable collar in a forward direction extends the shaft.

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4. The instrument of claim 3, wherein the shaft is retractable within the passageway by moving the rotatable collar in a reverse direction.

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5. The instrument of claim 3, further comprising a pin extending transverse to the shaft for connecting the shaft to the rotatable collar, wherein the rotatable collar has a threaded inner surface for engaging the pin.

6. The instrument of claim 5, further comprising an axially extending slot on the body assembly for limiting the axial movement of the pin and shaft.

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7. The instrument of claim 2, wherein the shaft applies distraction between the first portion and the second portion of the implant to rigidify the implant when a tip of the shaft extends from the passageway.

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8. The instrument of claim 2, wherein the engagement mechanism comprises one or more retractable tabs for selectively engaging one or more recesses on the implant, wherein the tabs retract in a radial direction when the shaft retracts within the passageway.

9. The instrument of claim 1, further comprising alignment protrusions formed on a tip of the body assembly for aligning the instrument with the implant.

10. The instrument of claim 1, further comprising a spring for biasing the shaft to a first position relative to the engagement mechanism.

11. A screwdriver for a polyaxial screw having a head portion movably mounted to a shaft portion, the screwdriver comprising:

10 a body assembly defining an axially extending inner passageway and including a plurality of retractable tabs for selectively engaging recesses on the polyaxial screw and a tip defining a plurality of alignment protrusions for mating with a rod-receiving opening on the polyaxial screw to align the screwdriver with the polyaxial screw;

an inner shaft for applying distraction between the head portion and the shaft portion to rigidify the screw, the inner shaft being movably disposed within the passageway;

15 a threaded rotatable collar surrounding the body assembly and having a threaded inner surface; and

a coupling pin extending from the inner shaft and interfering with the threaded inner surface of the collar to couple the inner shaft to the threaded collar.

20 12. The screwdriver of claim 11, further comprising an axially extending slot in the body assembly through which the pin extends.

13. The screwdriver of claim 11, further comprising a handle surrounding and fixed to the rotatable collar.

25 14. The screwdriver of claim 11, further comprising a spring for biasing the inner shaft to a first position within the inner passageway.

15. A method of engaging a polyaxial screw, comprising the steps of:

30 moving a shaft relative to an engagement mechanism of an instrument to actuate the engagement mechanism to engage a first portion of the polyaxial screw; and

moving the shaft in a second direction relative to the engagement mechanism to rigidify the polyaxial screw.

16. The method of claim 15, further comprising the step of rotating the instrument in first direction to insert the polyaxial screw in a selected position.

17. The method of claim 16, further comprising the step of removing the polyaxial screw 5 by:

engaging the first portion of the polyaxial screw with the engagement mechanism, rigidifying the polyaxial screw; and
rotating the instrument in second direction opposite the first direction.

10 18. The method of claim 16, wherein the step of engaging the polyaxial screw comprises the steps of:

retracting tabs on the engagement mechanism by pulling on a handle to move the shaft;

aligning the polyaxial screw with the instrument; and

15 expanding the tabs to engage recesses on the polyaxial screw by releasing the handle.

19. The method of claim 18, wherein the step of rigidifying the implant comprises rotating the handle to extend the shaft of the instrument.

20 20. The method of claim 16, further comprising the step of adjusting the selected position of the polyaxial screw using the instrument.

21. A screwdriver for a polyaxial screw having a head portion movably mounted to a shaft portion, the screwdriver comprising:

25 retractable tabs formed on a distal end of the screwdriver for selectively engaging recesses on the head portion of the polyaxial screw, and

a shaft movable relative to the retractable tabs for selectively engaging the shaft portion of the polyaxial screw to fix the shaft portion relative to the head portion and for actuating the retractable tabs to engage with the recesses.